**Quarter One Project:**

**Linear Equations in the Real World**

**Final Project Due: Monday, October 6  
\*Parts of this project are taken from The Montery Institute.**

**Setting:** The Washington Latin Community Council has asked you to advise them as they begin planning the upcoming Winter Dance.

**Your Objective:** To make a presentation, using your knowledge of writing linear equations for real-world problems, that will help the Community Council make informed decisions about the upcoming Winter Dance.

**Three decisions:** The Community Council has to make several decisions about the Winter Dance:

- The council must choose a DJ for the dance.

- The council choose a food vendor for the dance.

- The council must choose a chair type to use.

**Your Task:** You must use the information from each company to make a presentation to the Community Council that will help them make the best decisions for the Winter Dance. Your presentation must make two or three **specific**, **convincing recommendations** based on **algebraic** and **graphic** evidence.

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| **First Problem: DJ**  The first decision to be made for the party is selecting a DJ. One company, *Tunes, Inc*. will provide a DJ for $125 per hour with a set-up fee of $325. A different company, *Music Innovations*, has offered a price of $165 per hour with no set-up fee. The Community Council has a budget of $825 to hire a DJ. **Which company should they use?**  **Your Job:** You must make a convincing recommendation for which DJ they should use. Your recommendation **must** include the following:   * An equation, in slope-intercept form, for the total cost of using *Tunes, Inc.* based on the number of hours the DJ will play. All variables must be defined. * A second equation, in slope-intercept form, for the total cost of using *Music Innovations*, based on the number of hours the DJ will play. All variables must be defined*.* * A graph of both equations on **the same** coordinate plane that can be used to compare the cost of the two companies. Axes must be labeled. * A written or spoken explanation of your recommendation that uses your equations and your graph. This explanation must be **specific**, **detailed,** and **convincing.** |

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| **Second Problem: Food Vendor**  The Community Council must choose between two food vendors. *Event Solutions* charges a one-time fee of $300 for table rentals and then $5 per person for food and drink. *Parties Made Easy* charges $8 per person for an all-inclusive event. The fee per person includes food and drink, as well as tables. The Community Council has a budget of $2,000. **Which food vendor should they use?**  **Your Job:** You must make a convincing recommendation for which food vendor they should use. Your recommendation **must** include the following:   * An equation, in slope-intercept form, for the total cost of using *Event Solutions* based on the number of people that come to the dance. All variables must be defined. * A second equation, in slope-intercept form, for the total cost of using *Parties Made Easy*, based on the number of people that come to the dance. All variables must be defined*.* * A graph of both equations on **the same** coordinate plane that can be used to compare the cost of the two companies. Axes must be labeled. * A written or spoken explanation of your recommendation that uses your equations and your graph. This explanation must be **specific**, **detailed,** and **convincing.** |

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| **A Stiff Challenge (Optional): Chair Storage**  The Community Council also needs to figure out which type of chairs to use for the dance based on the amount of storage space the chairs require. The storage space the Community Council has measures only 96 inches from the floor to the ceiling.  One type of chair, the *Comfy Seat*, measures like this: 1 chair by itself is 32 inches high, a stack of two chairs is 36 inches high, and a stack of three chairs is 40 inches high, etc.  A second type of chair, *Sittin’ Pretty*, measures like this: 1 chair by itself is 44 inches high, a stack of two chairs is 45 inches high, and a stack of three chairs is 48 inches high, etc.  **Which type of chair should be used to maximize the number of chairs that can be stored in the storage space?**  **Your Job:** You must make a convincing recommendation for which chair they should use. Your recommendation **must** include the following:   * An equation, in slope-intercept form, for the total height of a stack of *Comfy Seat* chairs based on the number of chairs in the stack. All variables must be defined. * A second equation, in slope-intercept form, for the total height of a stack of *Sittin’ Pretty* chairs based on the number of chairs in the stack. All variables must be defined. * A graph of both equations on **the same** coordinate plane that can be used to compare the cost of the two companies. Axes must be labeled. * A written or spoken explanation of your recommendation that uses your equations and your graph. This explanation must be **specific**, **detailed,** and **convincing.** |

**Display of Community Council Recommendation**

**Due: Monday, October 6**

**For your recommendation, you must choose how to present your findings and recommendations to the Community Council. You must include ALL of the information specified in each problem.**

**\*Remember, you must CONVINCE the Community Council to choose your recommendations using your algebraic and graphic evidence.**

**Options: Keep in mind that you cannot repeat an option for a future project in this class.**

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| **PowerPoint** | **Paper (2 page minimum)** | **Speech (with prop)** |
| **Poem** | **Skit** | **Video/Movie** |
| **Song** | **Poster** | **Booklet** |

**Requirements for Each Presentation Style:**

**PowerPoint:** Your PowerPoint must be a minimum of 6 slides. Each slide must contain a picture or graph. Correct spelling and grammar is required. Creativity is a must! Your PowerPoint must be EMAILED to Mr. Stiff or shared via google docs (no flash drives).

**Paper:** Your paper must be typed in Times New Roman font, 12 point, double-spaced. Your heading must be four lines only, single spaced (name/date/period/assignment description).Spelling and grammar count! TWO PAGE MINIMUM. Your paper must be PRINTED out, EMAILED, or SHARED with Mr. Stiff via google docs (no flash drives).

**Speech (with prop):** Your speech must be a minimum of 2 minutes and a maximum of 5 minutes. You must present all of the information and you may use notecards to guide you. You should make eye contact with your audience, speak at a pace and volume that can be clearly understood, and there should be evidence that you have practiced your speech. A PROP (SUCH AS THE GRAPHS) RELATED TO YOUR PROJECT IS REQUIRED.

**Skit:** Your skit must be a minimum of 2 minutes and a maximum of 5 minutes. You must present all the information through your skit and you may use notecards to guide you. You should speak at a pace and volume that can be clearly understood, and there should be evidence that you have practiced your skit. ALTHOUGH YOU MAY USE OTHER STUDENTS IN THE CLASS FOR YOUR SKIT, THESE STUDENTS WILL NOT RECEIVE CREDIT FOR YOUR SKIT AND YOU MUST REHEARSE WITH THEM OUTSIDE OF CLASS TIME.

**Video/Movie:** Your video/movie must be a minimum of 2 minutes and a maximum of 5 minutes. You must present all information through your movie. Creativity is a MUST, but the algebra must be clear. Your video/movie MUST be able to be viewed on a computer (uploaded to YouTube privately, emailed or shared with Mr. Stiff).

**Song:** Your song must be a minimum of 2 minutes and a maximum of 5 minutes. You must present all parts of the project and you must either record your song ahead of time or play it live for the class. If you record your song ahead of time, you are responsible for bringing all technology required to play your song for the class.

**Poster:** Your poster must be at least 12” by 12” and should be on posterboard or cardstock. All six parts of the draft must be present on your poster. Your poster must be neat, colorful and creative and include an additional element besides text (ie: scrapbooking embellishment, drawing, ribbons, etc). Spelling and grammar count!

**Booklet/Brochure:** Your booklet/brochure must be a minimum of 6 pages, including a title page. All parts of your draft must be presented, and you must have a drawing/picture/graph on each page. Spelling and grammar count and creativity is a must! Your booklet/brochure CANNOT be on looseleaf paper and must be creatively bound.

**Poem:** Your poem must be typed in Times New Roman font, 12 point, double-spaced. Your heading must be four lines only, single spaced (name/date/period/assignment description). Your poem should include all parts of your draft with room for creativity. Your poem can be in any form you like, but you need a minimum of three stanzas with a minimum of three lines each. Spelling counts!

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Quarter Project Rubric**

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|  | Unsatisfactory (0-2) | Satisfactory (3-8) | Outstanding (9-10) | Score |
| **Final Draft** |  |  |  |  |
| Algebraic Equations | Equations are not present or barely present. | Equations are written, but are incomplete and/or inaccurate. | All equations are written in correct slope-intercept form and are accurate. |  |
| Graphs | Graphs are not present or barely present. | Graphs are present, but are incomplete and/or inaccurate. | Graphs are present, complete, accurate and neat. |  |
| Budget Questions | Budget questions are not answered or answered only very minimally. | Budget questions are answered, but are incomplete and/or inaccurate. | All budget questions are answered completely and correctly. |  |
| Recommend-  ations | Recommendations are not provided or are only minimally provided. | Recommendations are given with some justifications and are somewhat or mostly convincing. | Recommendations are provided with excellent algebraic and graphic justifications and are extremely convincing. |  |
| Difficulty of Project | Student did not work to his/her ability; he/she did not take suggestions or seek advice when needed. | Student completed the required parts of the project to his/her ability but did not go above and beyond to challenge him/herself. | Student completed the required parts of the project, worked to the best of his/her ability and went beyond to complete the third problem. |  |
| Presentation Product | Presentation product does not fulfill the requirements. | Presentation product somewhat /mostly fulfills the requirements. | Presentation product fully meets all of the requirements and adds a personal, creative touch. |  |
| Total |  |  |  | /60 |